AMENDMENTS TO THE CLAIMS

1-37 (Cancelled)

38. (Currently amended) A method of forming a macroscopic molecular array of tubular carbon molecules, said method comprising the step of assembling subarrays of ~~up to~~ at least about 10^6 single-wall carbon nanotubes into a composite array.

39. (Original) The method of claim 38 wherein all the subarrays have the same type of nanotubes.

40. (Original) The method of claim 38 wherein the subarrays have different types of nanotubes.

41. (Currently amended) The method of claim 38 wherein the subarrays are made according to the method comprising:

(a) providing at least about 10^6 ~~tubular carbon molecules~~ single-wall carbon nanotubes of substantially similar length in the range between 50 to 500 nm;

(b) introducing a linking moiety onto at least one end of the ~~tubular carbon molecules~~ single-wall carbon nanotubes;

(c) providing a substrate coated with a material to which the linking moiety will attach; and

(d) contacting the ~~tubular carbon molecules~~ single-wall carbon nanotubes containing a linking moiety with the substrate.

42-162 (Cancelled)

163. (Currently Amended) A method of forming a macroscopic molecular array of tubular carbon molecules, said method comprising the step of assembling subarrays of at least about 10^6 single-wall carbon nanotubes into a composite array wherein the subarrays are made according to the method comprising:

(a) providing at least about 10^6 single-wall carbon nanotubes of substantially similar length in the range between 50 to 500 nm;

(b) introducing a linking moiety onto at least one end of the single-wall carbon nanotubes;

(c) providing a substrate coated with a material to which the linking moiety will attach; and

(d) contacting the single-wall carbon nanotubes containing a linking moiety with the substrate, ~~The method of claim 41~~ wherein the substrate comprises a substance selected from the group consisting of gold, mercury and indium-tin-oxide.

164. (Currently Amended) A method of forming a macroscopic molecular array of tubular carbon molecules, said method comprising the step of assembling subarrays of at least about 10^6 single-wall carbon nanotubes into a composite array wherein the subarrays are made according to the method comprising:

(a) providing at least about 10^6 single-wall carbon nanotubes of substantially similar length in the range between 50 to 500 nm;

(b) introducing a linking moiety onto at least one end of the single-wall carbon nanotubes;

(c) providing a substrate coated with a material to which the linking moiety will attach; and

(d) contacting the single-wall carbon nanotubes containing a linking moiety with the substrate, ~~The method of claim 41~~ wherein the linking moiety comprises a moiety selected from the group consisting of -S-, -S-$(CH_2)_n$ -NH-, and -$SiO_3(CH_2)_3NH$-.

165. (Currently amended) A method of forming a macroscopic molecular array of tubular carbon molecules, said method comprising the step of assembling subarrays of least about 10^6 single-wall carbon nanotubes into a composite array ~~The method of claim 38~~ wherein the subarrays are made according to the method comprising:

(a) providing a nanoscale array of microwells on a substrate;

(b) depositing a metal catalyst in each of said microwells; and

(c) directing a stream of hydrocarbon or CO feedstock gas at said substrate under conditions that effect growth of single-wall carbon nanotubes from each microwell.

166. (Previously presented) The method of claim 165 further comprising applying an electric field when growing the single-wall carbon nanotubes.

167. (Currently amended) A method of forming a macroscopic molecular array of tubular carbon molecules, said method comprising the step of assembling subarrays of at least about 10^6 single-wall carbon nanotubes into a composite array ~~The method of claim 38~~ wherein the subarrays are made according to the method comprising:

(a) providing a surface comprising purified single-wall carbon nanotube material;

(b) subjecting the surface to oxidizing conditions sufficient to cause short lengths of broken single-wall carbon nanotubes to protrude up from the surface; and

(c) applying an electric field to the surface to cause the single-wall carbon nanotubes to align in an orientation generally perpendicular to the surface and coalesce into an array.

168. (Previously presented) The method of claim 167 wherein the oxidizing conditions comprise heating the surface to about 500°C in an atmosphere of oxygen and CO_2.